Overview of the activities of the study group ISO/IEC JTC1/SC38/SG1 about "Cloud Computing"

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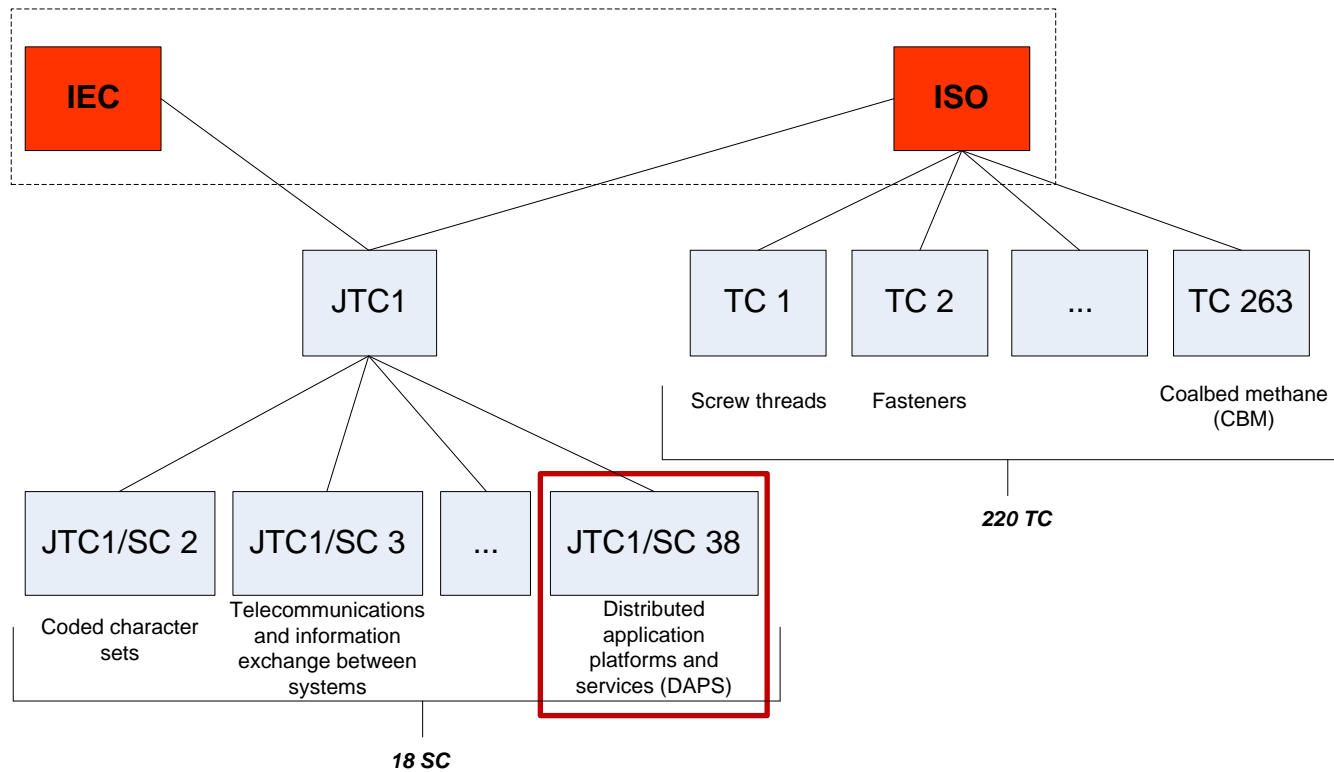
Summary

- Presentation of ISO/IEC JTC1/SC38 and the Study Group on Cloud Computing

- Study Group Report on Cloud Computing

- Next steps and work in progress in other SCs

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ISO, JTC, TC and SC

ISO/IEC JTC1/SC38 statement of scope

- Title: Distributed Application Platforms and Services (DAPS)

- Scope: Standardization for interoperable Distributed Application Platforms and Services including:

  - WG1: Web Services,
  - WG2: Service Oriented Architecture (SOA), and
  - SG1: Cloud Computing

- Members: 17 P-Members and 13 O-Members

- Luxembourg is O-Member since January 2011

Study Group on Cloud Computing (SGCC) history

- September 2009: Report of JTC 1/SWG-P on possible future work on Cloud Computing in JTC 1
  - JTC 1 Special Working Group on Planning

- November 2009: SC38 creation
  - Dr. Donald Deutsch (Oracle – USA) = SC 38 Chairman

- May 2010: First plenary meeting of JTC 1/SC 38, Beijing, China

- September 2010: SC 38 Study Group on Cloud Computing (SGCC) Meeting, New York, NY (JTC 1/SC 38 Plenary and Subgroup Meeting)

- April 2011: JTC1/SC 38 plenary & WGs meetings, Paris, France

- September 2011: JTC1/SC 38 plenary & WGs meetings, Seoul, Korea

SGCC business plan

• At the September 2010 meeting, SC 38 approved SGCC's recommendation to create **Editorial and Work Teams** to develop the general **SGCC report and standards analysis report,** respectively

• The focus for the next year is to develop:
  • […]
  • **Comprehensive report on Cloud Computing activities and opportunities for standardization**; this report will include both the Study Group Report and the Standards Analysis Report

• **Identified risk:** SGCC must stay out ahead of the tsunami of interest in Cloud Computing by completing its report(s) and proposing concrete standards setting activities for SC 38 consideration

• **Identified opportunities:** SC 38 is well positioned to be:
  • […]
  • The leading standardization forum for Cloud Computing

Most active countries in the SGCC (recent analysis)

Asia	North America	Europe
• Korea • China • Japan	• USA • Canada	• Sweden • Finland • Ireland • France • Germany • UK

Luxembourg is O-member from January 2011

• JTC1/SC38 approves the following officers for a 1-year term of office, effective immediately:
- Seungyun Lee (KR)   Convenor, Study Group on Cloud Computing
- Zhou Ping (CN)   Secretary, Study Group on Cloud Computing

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A document in final version

Study Group Report on Cloud Computing

- <u>First draft</u>: 14 January 2011

- <u>Editor</u>: ISO/IEC JTC 1 SC38 SGCC

- <u>Second draft</u>: 16 May 2011

- <u>Final version</u>: 30 September 2011

Study Group Report on Cloud Computing

• The main purpose of this document is to **identify the future work of SC38 in the area of Cloud Computing,** and to **provide a basis for SC38** working with other relevant JTC1 subcommittees and with groups in other SDOs

• Two detailed objectives:

    1. the report clarifies briefly **what is meant by Cloud Computing** for its purposes

    2. the report surveys the **current state of standards** relevant for Cloud Computing and identifies what exists, both in terms of bodies and in terms of standards; and identifies any apparent major deficiencies and issues

Cloud Computing definition

• Cloud Computing is a model for enabling ubiquitous, convenient, on-demand network access to a shared pool of configurable resources (e.g. networks, servers and storage systems), applications and services that can be rapidly provisioned and released with minimal management effort or service provider interaction. This Cloud model promotes **confidentiality, integrity and availability** and is composed of **six essential characteristics, three service models**, and **four deployment models**.

• Mainly inspired from **NIST definition of Cloud Computing (SP 800-145 (Draft))**

• This definition has evolved in the different versions of the document and may still evolve in the coming standards

Cloud Computing definition

Essential characteristics

- *On-demand self-service*
- *Broad network access*
- *Multi-tenancy*
- *Resource pooling*
- *Rapid elasticity*
- *Measured Service*

Deployment models

- *Private Cloud*
- *Community Cloud*
- *Public Cloud*
- *Hybrid Cloud*

Service models

- *Software as a Service (SaaS)*
- *Platform as a Service (PaaS)*
- *Infrastructure as a Service (IaaS)*

Summary of Cloud Computing industry initiatives

Industry Initiative	Area of Interest
ITU-T Focus Group on Cloud Computing	International standard organization
ISO/IEC JTC 1/SC 7	International standard organization
ISO/IEC JTC 1/SC 27	International standard organization
European Network and Information Security Agency (ENISA)	EU agency
ETSI Technical Committee (TC) CLOUD	European standard organization
CESI (China Electronics Standardization Institute)	Chinese standard organization
CCF (Cloud Computing Forum in Korea)	Korean industry consortium
KCSA (Korea Cloud Service Association)	Korean industry consortium
Japan Cloud Consortium	Japanese industry consortium
Open Grid Forum (OGF)	Industry consortium
Distributed Management Task Force (DMTF)	Industry consortium
Cloud Security Alliance (CSA)	Industry consortium
OASIS	Industry consortium
Object Management Group (OMG)	Industry consortium
Storage Networking Industry Association (SNIA)	Industry consortium
Cloud Computing Use Case Discussion Group	Ad Hoc
The Open Group	Industry consortium
Institute of Electrical and Electronic Engineers Standards Association (IEEE-SA)	Standards Development Organization
ATIS Cloud Services Forum	Industry consortium
TeleManagement Forum	Industry consortium
Cloud Industry Forum (CIF)	Industry consortium
OSGi Alliance	Industry consortium

Cloud Computing standardization areas proposal

High-level

- General & fundamental
- Interoperability & Portability
- Management
- Security
- Testing

Low-level

- Identity
- Infrastructure API
- Platform API
- Data API
- Data Security
- Privacy
- Environment
- QoS
- Management
- Transport

Until now there is no global agreement on Cloud Computing Standardization areas in SC38 SGCC

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New Work Item Proposal (NWIP) – Vocabulary

- <u>Title</u>: Specification of Data Value Domain Distributed Application Platforms and Services - **Cloud Computing – Vocabulary**

- <u>Scope</u>: This International Standard provides an overview of Cloud Computing along with a **set of terms and definitions**. It is a **terminology foundation** for the cloud computing standardization work

- <u>Justification</u>: The origins of Cloud Computing have led to **widespread confusion about terms, their definitions, and acronyms**. This impedes efforts to standardize Cloud Computing because each specification provides its own definitions, often obscuring the terminology similarities and differences across specifications

ISO

NEW WORK ITEM PROPOSAL	
Date of presentation	Reference number (to be given by the Secretariat)
Proposer	**ISO/IEC / SC N**
Secretariat	

New Work Item Proposal (NWIP) – Reference Architecture

- <u>Title</u>: Specification of Data Value Domain Distributed Application Platforms and Services - **Cloud Computing – Reference Architecture**

- <u>Scope</u>: This International Standard provides an overview of the general concepts and characteristics of Cloud Computing, Cloud Computing types, the components of Cloud Computing, and Cloud Computing actors and the relationships between these elements

- <u>Justification</u>: An international standard reference architecture is required which identifies the various **Cloud models, the actors involved, and architectural components**. […] The reference architecture should also align with those terms and definitions that are developed in SC38 for Cloud Computing Vocabulary.

NEW WORK ITEM PROPOSAL	
Date of presentation	Reference number (to be given by the Secretariat)
Proposer	**ISO/IEC / SC N**
Secretariat	

Study Period on Cloud Computing in other SCs

- Cloud Computing is a multifaceted topic, concerning other SCs in ISO/IEC JTC1

- ISO/IEC JTC1/SC7 – Software and systems engineering
    - Study period report on "Possibility of Additional Standards in the Area of Cloud Computing"
        → Recommends **7 NWIPs**

- ISO/IEC JTC1/SC27 – IT Security techniques
    - Study period report on "Cloud computing security and privacy"
        → Recommends a NWIP process for a **Cloud Computing Security and Privacy Management System**

Evolution of the SGCC and its activities

- SGCC recommends that SC 38 approve the Study Group Report on Cloud Computing, share with liaison organizations, and make publicly available if possible

- SGCC considers that the two NWIPs if approved would be best addressed in a **new Working Group in SC38**

- If the new Working Group is approved, the first Working Group meeting will be held **13-17 February 2012 in Vancouver, Canada**

Nicolas MAYER

Chargé de mission **– ICT Standardization**

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